

IN THE CLAIMS

Please cancel claims 1-31, 51-74, and 94-105 without prejudice.

The following listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Pending Claims:

- 1 1-31. (Cancelled)
- 1 32. (Original) A method of bridging optical
2 signals in optical network equipment, the method
3 comprising:
 - 4 receiving an optical signal;
 - 5 splitting the optical signal into at least two similar
6 optical signals;
 - 7 processing the at least two similar optical signals in
8 the optical network equipment; and
 - 9 selecting one of at least two outputs of the optical
10 network equipment that has a resultant optical output
11 signal responsive to the processing of one of the at least
12 two similar optical signals in the optical network
13 equipment.
- 1 33. (Original) The method of claim 32 wherein
2 the optical network equipment is an optical cross-
3 connect switch and the processing of the at least two
4 similar optical signals therein includes routing the at
5 least two similar optical signals respectively over at
6 least two optical paths to the at least two outputs.

1 34. (Original) The method of claim 32 wherein
2 one of the at least two outputs of the optical network
3 equipment has failed and another of the at least two
4 outputs is selected that has the resultant output
5 responsive to the processing.

1 35. (Original) The method of claim 32 wherein
2 the splitting of the optical signal into the at least
3 two similar optical signals and the processing of the at
4 least two similar optical signals in the optical network
5 equipment provides redundancy to increase reliability of
6 the optical network equipment.

1 36. (Original) The method of claim 32 further
2 comprising
3 prior to the splitting of the optical signal into the
4 at least two similar optical signals, converting the
5 optical signal into an electrical signal.

1 37. (Original) The method of claim 32 further
2 comprising
3 converting the resultant optical output signal into an
4 electrical signal.

1 38. (Original) The method of claim 37 further
2 comprising
3 converting the electrical signal into an optical
4 output signal from the optical network equipment.

1 39. (Original) An apparatus for bridging optical
2 signals in optical network equipment comprising:

3 a splitter to split an input optical signal into the
4 optical network equipment into two similar optical signals;
5 the optical network equipment to similarly process the
6 two similar optical signals into two similar resultant
7 optical output signals at two outputs if no failure exists;
8 and

9 a switch to select one of the two outputs having a
10 resultant optical output signal as the output optical
11 signal from the optical network equipment.

1 40. (Original) The apparatus of claim 39 wherein
2 the optical network equipment is an optical cross-
3 connect switch and the similar process of the two similar
4 optical signals therein includes routing the two similar
5 optical signals respectively over two optical paths to the
6 two outputs.

1 41. (Original) The apparatus of claim 39 wherein
2 one of the two outputs of the optical network
3 equipment is faulty and the other one of the two outputs is
4 selected by the switch that has the resultant optical
5 output signal as the output optical signal from the optical
6 network equipment.

1 42. (Original) The apparatus of claim 39 wherein
2 the splitter and the optical network equipment provide
3 redundancy for the input optical signal in generating the

4 output optical signal to increase reliability of the
5 optical network equipment.

1 43. (Original) The apparatus of claim 39 wherein
2 the splitter is an optical splitter.

1 44. (Original) The apparatus of claim 43 further
2 comprising
3 an optical-electrical-optical converter to convert the
4 input optical signal into an electrical signal and the
5 electrical signal into an optical signal.

1 45. (Original) The apparatus of claim 44 wherein
2 the optical-electrical-optical converter and the
3 optical splitter are in an input path of a smart port card
4 of the optical network equipment.

1 46. (Original) The apparatus of claim 39 further
2 comprising
3 an optical-electrical converter to convert the input
4 optical signal into an electrical signal, and wherein the
5 splitter includes
6 a first electrical-optical converter coupled to the
7 optical-electrical converter, the first electrical-optical
8 converter to convert the electrical signal into one of the
9 two similar optical signals, and
10 a second electrical-optical converter coupled to the
11 optical-electrical converter, the second electrical-optical
12 converter to convert the electrical signal into another one
13 of the two similar optical signals.

1 47. (Original) The apparatus of claim 39 wherein
2 the switch is an optical switch.

1 48. (Original) The apparatus of claim 47 further
2 comprising

3 an optical-electrical-optical converter coupled to the
4 optical switch, the optical-electrical-optical converter to
5 convert the resultant optical output signal into an
6 electrical signal and the electrical signal into the output
7 optical signal from the optical network equipment.

1 49. (Original) The apparatus of claim 48 wherein
2 the optical-electrical-optical converter and the
3 optical switch are in an output path of a smart port card
4 of the optical network equipment.

1 50. (Original) The apparatus of claim 39 wherein
2 the switch includes
3 a first optical-electrical converter to convert one of
4 the two resultant output signals into a first electrical
5 signal,
6 a second optical-electrical converter to convert
7 another one of the two resultant output signals into a
8 second electrical signal,
9 a multiplexer coupled to the first optical-electrical
10 converter to receive the first electrical signal and to the
11 second optical-electrical converter to receive the second
12 electrical signal, the multiplexer to select between the

13 first electrical signal and the second electrical signal as
14 its output electrical signal, and
15 an electrical-optical converter coupled to the
16 multiplexer to receive the output electrical signal, the
17 electrical-optical converter to convert the output
18 electrical signal into the output optical signal of the
19 optical network equipment.

1 51-74. (Cancelled)

1 75. (Original) An apparatus for bridging optical
2 signals in optical network equipment comprising:
3 a splitter to split an input optical signal into the
4 optical network equipment into two similar optical signals;
5 a first optical switch fabric to couple optical
6 signals from one network connection to another network
7 connection, the first optical switch fabric to receive one
8 of the two similar optical signals and generate a first
9 switched optical signal;
10 a second optical switch fabric to couple the optical
11 signals from the one network connection to the another
12 network connection, the second optical switch fabric to
13 receive another one of the two similar optical signals and
14 generate a second switched optical signal; and
15 a switch to receive the first and second switched
16 optical signals and to select between the first switched
17 optical signal and the second switched optical signal as
18 the output optical signal from the optical network
19 equipment.

1 76. (Original) The apparatus of claim 75 wherein
2 the first optical switch fabric provides one optical
3 path for data signals of the incoming optical signal and
4 the second optical switch fabric provides a redundant
5 optical path for data signals of the incoming optical
6 signal.

1 77. (Original) The apparatus of claim 75 wherein
2 either one of the first and second switched optical
3 signals is faulty and the other one is selected by the
4 switch as the output optical signal from the optical
5 network equipment.

1 78. (Original) The apparatus of claim 75 wherein
2 the splitter is a passive splitter.

1 79. (Original) The apparatus of claim 75 wherein
2 the splitter is an optical splitter.

1 80. (Original) The apparatus of claim 75 further
2 comprising
3 an optical-electrical-optical converter coupled to the
4 splitter, the optical-electrical-optical converter to
5 convert the input optical signal into an electrical signal
6 and the electrical signal into a regenerated optical signal
7 to couple into the splitter as the input optical signal.

1 81. (Original) The apparatus of claim 80 wherein

2 the electrical signal to provide monitoring of the
3 input optical signal.

1 82. (Original) The apparatus of claim 80 wherein
2 the optical-electrical-optical converter and the
3 splitter are in an input path of a smart port card of the
4 optical network equipment.

1 83. (Original) The apparatus of claim 75 further
2 comprising

3 an optical-electrical converter to convert the input
4 optical signal into an electrical signal, and wherein the
5 splitter couples one of the two similar optical signals
6 into the first optical switch fabric and the other one of
7 the two similar optical signals into the second optical
8 switch fabric, the splitter including

9 a first electrical-optical converter coupled to the
10 optical-electrical converter, the first electrical-optical
11 converter to convert the electrical signal into one of the
12 two similar optical signals, and

13 a second electrical-optical converter coupled to the
14 optical-electrical converter, the second electrical-optical
15 converter to convert the electrical signal into another one
16 of the two similar optical signals.

1 84. (Original) The apparatus of claim 75 wherein
2 the switch is a passive switch.

1 85. (Original) The apparatus of claim 75 wherein
2 the switch is an optical switch.

1 86. (Original) The apparatus of claim 85 further
2 comprising

3 an optical-electrical-optical converter coupled to the
4 optical switch, the optical-electrical-optical converter to
5 convert the optical output signal into an electrical signal
6 and the electrical signal into an output optical signal to
7 output from the optical network equipment as the optical
8 output signal.

1 87. (Original) The apparatus of claim 86 wherein
2 the optical-electrical-optical converter and the
3 optical switch are in an output path of a smart port card
4 of the optical network equipment.

1 88. (Original) The apparatus of claim 75 wherein
2 the switch includes
3 a first optical-electrical converter to convert the
4 first switched optical signal into a first electrical
5 signal,
6 a second optical-electrical converter to convert the
7 first switched optical signal into a second electrical
8 signal,
9 a multiplexer coupled to the first optical-electrical
10 converter to receive the first electrical signal and to the
11 second optical-electrical converter to receive the second
12 electrical signal, the multiplexer to select between the
13 first electrical signal and the second electrical signal as
14 its output electrical signal, and

15 an electrical-optical converter coupled to the
16 multiplexer to receive the output electrical signal, the
17 electrical-optical converter to convert the output
18 electrical signal into the output optical signal of the
19 optical network equipment, the output electrical signal for
20 monitoring the output optical signal of the optical network
21 equipment.

1 89. (Original) A method of bridging optical
2 signals in an optical cross-connect switch to increase
3 reliability, the method comprising:

4 receiving an optical signal;
5 splitting the optical signal into two similar optical
6 signals;
7 coupling one of the two similar optical signals into a
8 first optical switch fabric and the another one of the two
9 similar optical signals into a second optical switch
10 fabric;
11 routing the two similar optical signals over optical
12 paths respectively in the first optical switch fabric and
13 the second optical switch fabric to two outputs; and
14 selecting one of the two similar optical signals at
15 the two outputs as an optical output signal of the optical
16 cross-connect switch.

1 90. (Original) The method of claim 89 wherein
2 one of the two similar optical signals has failed to
3 reach a respective one of the two outputs and the other of
4 the two outputs is selected by the selecting which has the
5 other of the two similar optical signals present.

1 91. (Original) The method of claim 89 further
2 comprising

3 prior to the splitting of the optical signal into the
4 two similar optical signals, converting the optical signal
5 into an electrical signal.

1 92. (Original) The method of claim 89 further
2 comprising

3 converting the optical output signal into an
4 electrical signal for monitoring.

1 93. (Original) The method of claim 92 further
2 comprising

3 converting the electrical signal into an optical
4 signal to be output as the output optical signal from the
5 optical network equipment.

1 94-105. (Cancelled)